Examining the relationship between emergency room visits of children with neurodevelopmental disabilities and access to services and family financial hardship: 2005-2006 National Survey of Children with Special Health Care Needs

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Presenter Disclosure

- Presenter: Sue Lin, MS
- No relationships to disclose

Background and Significance

- Emergency department (ED) health care professionals often care for pediatric patients with mental health emergencies and children with neurodevelopmental disabilities (ND)
- Parents of young children often seek care in ED for non-urgent conditions when their pediatrician cannot be reached quickly . Overall, approximately 40 percent of ED visits are not urgent.
- Heavy ED users typically have significant health needs and/or face barriers to receiving other kinds of care
- ED overcrowding threatens patient safety and public health.

Case Definitions

Emergency Department Use (EDU)

- EDU was dichotomized into two categories: 0-2 EDU and 3 or more EDU
- NS-CSHCN survey question on number of ER visits is as follows: ['During the past 12 months '], how many times did (S.C.) visit a hospital emergency room? Response -ENTER NUMBER OF VISITS

Children with Neurodevelopmental Disabilities (ND)

- ND included the following conditions:
  - Attention Deficit Disorder
  - Autism
  - Down Syndrome
  - Mental Retardation
  - Cerebral Palsy
  - Muscular Dystrophy
- In NS-CSHCN, parent/caregivers responded to the following questions about his/her child's conditions: "To the best of your knowledge, does subject child (S.C.) currently have the _____ conditions?"

Case Definitions cont…

- Maternal and Child Health Bureau (MCHB) Core Outcome #2: Children and youth with special health care needs (CSHCN) receive coordinated ongoing comprehensive care within a medical home
- MCHB utilize the core outcomes to measure progress towards comprehensive and family-centered systems of care

Access to Care

- Child's health care has caused financial problems
- Family member stopped working due to child's health
- Family members have cut work hours to care for child
- Family needed additional income for child's medical expenses

Financial Hardship

Objectives

- Objective 1: Examine the association between the frequency of emergency department use (EDU) and parental report of access to care for children with neurodevelopmental disabilities (ND)
- Objective 2: Examine the association between the frequency of emergency department use (EDU) and financial hardships for families with children with neurodevelopmental disabilities (ND)

Data Source: 2005-2006 National Survey of Children with Special Health Care Needs (NS-CSHCN)

- Nationally representative, cross-sectional telephone health care survey
- Interviews conducted in English, Spanish, Cantonese, Korean, Vietnamese, and Mandarin
- Sample size of children with ND: N=15238 aged 17 years or younger
- Survey administered by CDC's National Center on Health Statistics (NCHS) and funding support provided by the Maternal and Child Health Bureau (MCHB), Health Resources and Services Administration (HRSA)

Methods

- Secondary data analysis of the 2005-2006 NS-CSHCN
- Bivariate analysis (X^2 statistics) of EDU and sociodemographic variables, access to services, and financial hardship
- Multivariate logistics regression to examine associations between EDU and access to services and financial hardships while controlling for individual level sociodemographic variables (insurance status, race/ethnicity, family structure, gender, child age)
- Statistical Software Package: SAS version 9.3

Results

- 27.4% of Non-Hispanic Black Children with ND have 3 or more EDU as compared to 15.7% in 0-2 EDU category
- More children with ND on public insurance had 3 or more EDUs 54.1% as compared to 32.7 in the 0-2 EDU category
- More children with ND age 0-5 years old had 3 or more EDU

Table 1. Sociodemographic characteristics of Children with ND		
Weighted Percentage (%)	0-2 EDU	3 or more EDU
Race/Ethnicity	X^2 (p-value) = <.0001	
Hispanic	11.0	14.6
Non-Hispanic White	67.4	50.5
Non-Hispanic Black	15.7	27.4
Non-Hispanic Multi-race/Other	5.9	7.5
Insurance Type	X^2 (p-value) = <.0001	
Private and Other comprehensive	63.7	41.8
Public	32.7	54.1
Uninsured	3.6	4.1
Age	X^2 (p-value) = <.0001	
0-5 Years	10.3	21.5
6-11 Years	41.6	33.5
12-17 Years	48.0	45.0

Results: Access to Care

Table 2. Adjusted odds ratios for children with neurodevelopment disabilities and 3 or more emergency room visits and access to care			
MCHB Core Outcome- Children receiving coordinated, ongoing, comprehensive care within a medical home	AOR	95% Confidence Interval	P-value
Doctors usually or always make the family feel like a partner	0.72	(0.57, 0.90)	0.005
Family is very satisfied with services received	0.74	(0.61, 0.91)	0.004
The child has a usual health care source	0.57	(0.42, 0.78)	0.0004
The child has a usual source for preventive care	0.71	(0.45, 1.12)	0.14
The child receives effective care coordination	0.87	(0.71, 1.06)	0.16
Family usually or always gets sufficient help coordinating care, if needed	0.88	(0.71, 1.09)	0.25
Doctors usually or always listen carefully	0.61	(0.49, 0.77)	<.0001
Doctors are usually or always sensitive to values and customs	0.64	(0.51, 0.81)	0.0002
Doctors are usually or always provide the needed information	0.79	(0.64, 0.98)	0.03

Table 3. Adjusted odds ratios for children with neurodevelopment disabilities and 3 or more emergency room visits and family financial difficulties

Family financial difficulties	AOR	95% Confidence Interval	P-value
Child's health care has caused financial problems	2.06	(1.69, 2.50)	<.0001
Family member stopped working due to child's health	2.25	(1.83, 2.75)	<.0001
Family members have cut work hours to care for child	1.95	(1.59, 2.38)	<.0001
Family needed additional income for child's medical expenses	2.12	(1.74, 2.59)	<.0001

Results: Financial Hardship

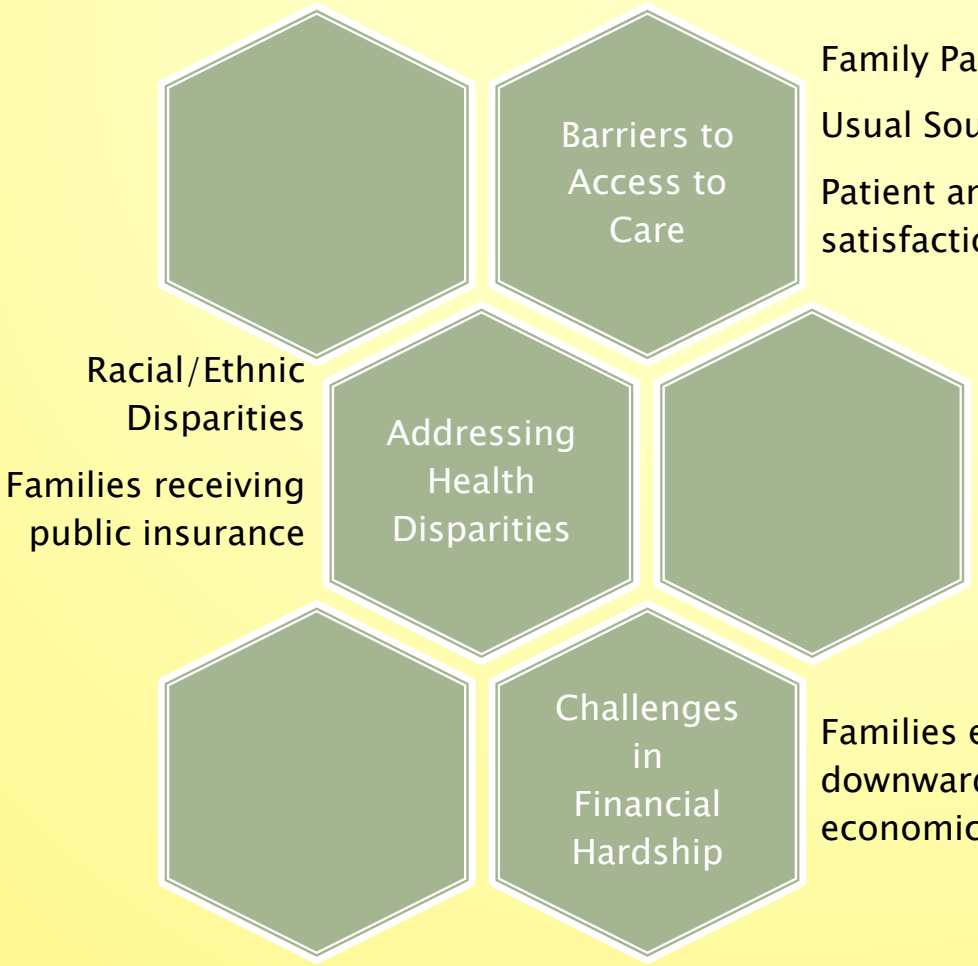
- Increased EDU are positively associated parental report financial problems as a result of the child's health care
- In addition, parents who need additional income to pay for medical expense and stopped working due to child's health are twice as likely to report 3 or more EDU

Results

Table 4. Adjusted odds ratios for children with neurodevelopment disabilities and 3 or more emergency room visits and physical/psychosocial difficulties			
	AOR	95% Confidence Interval	P-value
Any bodily difficulties	3.54	(2.77, 4.53)	<.0001
Any activity or participation difficulties	1.94	(1.30, 2.90)	0.001
Any other emotional/ behavioral difficulties	1.41	(1.12,1.77)	0.004

- Children with ND who had 3 or more EDU were:
  - 3 times as likely to have any bodily difficulties
  - Nearly twice as likely to have any activity or participation difficulties

Discussion


Barriers to Access to Care
Addressing Health Disparities
Challenges in Financial Hardship
Family Partnership
Usual Source of Care
Patient and family satisfactions
Racial/Ethnic Disparities
Families receiving public insurance
Families experiencing downward spiral in economic status

Discussion: Strategies for Reduction of EDU

To facilitate the reduction of ER visits, possible strategies might involve the following:

1. Provide support to parents with young children with ND in the management of complex health care needs
2. Provide community supports to parents in accessing available public benefits and services and financial planning
3. Providing access to assistive technology services for children with physical difficulties
4. Clinical provider education and training to enhance supporting families of children with ND

Discussion: Policy Implication and Future Directions

- Optimization of healthcare
  - Support and implementation for Patient-Centered Medical Home (PCMH) in primary care especially in Federally Qualified Health Centers serving vulnerable population
  - Electronic Health Record (EHR) data facilitating coordination among primary care and specialty care serving children with ND
- Future direction:
  - Identify the leading cause of ED visits for children with neurodevelopmental disabilities
  - Develop categorization of frequency EDU for the ND population to better measure impact

Strengths and Limitations

Scientific Contribution

- Exploratory analysis focused on children with neurodevelopmental disabilities and EDU in the US
- Identify access to care issues for children with ND with higher frequency of EDU

Policy Contribution

- Identify likely groups for EDU among children with ND
- Provide information to develop anticipatory guidance and/or community-supports for families

Survey Characteristics

- Largest survey for children with special health care needs
- Self-report data from parents or caregivers

Strength

Bias

- Respondent
- Recall

RDD Random Digit Dialing

- Nonresponse Bias
- Coverage Bias

Survey Design Limitations

- Cross-sectional survey
- Lack of additional information on cause of the ED visit and choice of ED services

Limitation

Contact Information

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